



EDWARD S. MORSE.

SKETCH OF PROFESSOR EDWARD S. MORSE.

PROF. MORSE was born in Portland, Maine, in 1838. He had an early love of natural history, and at thirteen years of age he commenced a collection of shells and minerals. At the outset he made a specialty of shells, and in 1857 gave his first contribution to the Boston Society of Natural History. He attended school in Bethel, Maine, and while following the usual course of an academy took but little interest in the classics, but busied himself with the woods and streams, and during this time added many new and minute species of land-shells to science.

For several years he followed the profession of mechanical draughtsman in the locomotive-works in Portland; and he also drew on wood for a while in Boston, thus cultivating that remarkable gift of graphic illustration which has since been of such great use to him both in his scientific work and in his public lectures. In 1852 Mr. Morse became a special student of Prof. Agassiz, at the Museum of Comparative Zoölogy at Cambridge, where he remained until 1862, pursuing closely his biological work, but also attending the lectures of Wyman, Cook, and Lowell. While with Agassiz he became more especially interested in the study of the *Brachiopoda*, a class of salt-water bivalve creatures long regarded as mollusks, and of great interest in every aspect; for, although of a low animal type, no other class exhibits such an extensive range in time, geographical distribution, and depth of water. Prof. Morse's first paper on this subject was published in the "Proceedings of the Boston Society of Natural History, 1862." In 1866 he removed to Salem, Massachusetts, where he still resides. Here he became one of the founders of the *American Naturalist*. In 1868 he was elected a Fellow of the American Academy of Arts and Sciences, and in 1871 he received the honorary title of Doctor of Philosophy from Bowdoin College, in which institution he was Professor of Zoölogy and Comparative Anatomy for three years. In 1874 he was elected to one of the university lectureships at Harvard. In 1876 he became a Fellow of the National Academy of Sciences, and the same year was elected Vice-President of the American Association for the Advancement of Science. In the prosecution of his zoölogical investigations Prof. Morse has made many excursions, visiting the Bay of Fundy several times, and also the Gulf of St. Lawrence, and Beaufort Harbor, North Carolina. Desirous of pushing his observations into regions but little examined, Prof. Morse last year went to Japan, for the purpose of dredging on the coast and searching for new specimens in his favorite lines of research. But the heathen of that remote region had the sagacity to detect the character of their visitor, and quickly secured his services, and set

him at work. They said to him in effect, "We do not want the religion, nor the morality, nor the politics of your people, but we want your science." Prof. Morse was accordingly induced to accept the chair of zoölogy in the Imperial University of Tokio. He established a zoölogical station at the Bay of Yeddo, and made large collections for the museum at Tokio, besides a great number of specimens for exchange with American societies. He also discovered the traces of early man in Japan, found a large quantity of ancient pottery, and, in an address before the Asiatic Society at Tokio, he communicated the results of these researches.

Prof. Morse's most important contributions to science have been his investigations on the *Brachiopoda*, which he has pursued with indefatigable industry, going deeply into the question of their structure and affinities. By the help of embryological analysis he has thrown new and important light upon their systematic position in the scheme of invertebrate life. He maintains the view that the Brachiopods must be removed from the division of mollusks and classed with the worms. These ideas have been adopted by many leading naturalists both here and in Europe.

Prof. Morse has made all his expeditions for scientific investigation at his own private expense, and, not being a man of wealth, he has been compelled to lecture much during the winter season to get the means of carrying on his researches during the summer. He has given courses of lectures before the Lowell Institute of Boston, the Peabody Institute of Baltimore, and the Cooper Institute of New York, and has also given courses and single lectures in all the principal cities in the Northern and Western States. Of his rare qualities as a popular scientific lecturer, the thoroughness of his information, his vivid, free, and forcible style as a speaker, and his great skill of rapid delineation upon the blackboard, we have previously spoken.

Prof. Morse is a man of irrepressible activity and an inexhaustible flow of spirits, genial and hearty in manners, a fluent and fertile talker, a copious story-teller, a lover of music, and passionately fond of children. He is a patient, assiduous worker, and has contributed largely to the proceedings of scientific societies and to scientific periodicals. The following are among the most important of his publications :

1. "Description of New Species of *Helix*" (*Helix asteriscus*), (Proceedings of the Boston Society of Natural History, vol. vi., 1857, p. 1).
2. Description of New Species of *Helix*" (*Helix milium*), (Proceedings of the Boston Society of Natural History, vol. vii., 1859, p. 1).
3. "The Hæmal and Neural Regions of Brachiopoda" (Proceedings of the Boston Society of Natural History, vol. ix., 1862, pp. 3).
4. "On the Normal Position of Cephalopods" (Proceedings of the Portland Society of Natural History, vol. i., 1863).
5. "On the Occurrence of Rare Helices in Ancient Shell-Heaps" (Proceedings of the Portland Society of Natural History, vol. i., 1863).
6. "Synopsis of the Terrestrial and Fluvial Mollusks of Maine" (published by the Author. 1864, pp. 4).

7. "Observations on the Terrestrial and Fluvial Mollusks of Maine" (*Journal of the Portland Society of Natural History*, vol. i., 1864, 2 plates, 26 figures, pp. 63, 104 figures).

8. "Description of New Species of Pupadæ" (*Annals of the New York Lyceum of Natural History*, vol. viii., 1865, pp. 6, 11 figures).

9. "A Classification of Mollusca based on the Principle of Cephalization" (*Proceedings of the Essex Institute, Salem*, vol. vi., 1865, 1 plate, 27 figures, pp. 19).

10. "Description of a New Species of Cyclocardia" (*C. novanglæa*), (*Annual Report of the Peabody Academy of Science*, 2 figures, p. 1).

11. "Note on Classification of Pulmonifera" (*Proceedings of the Boston Society of Natural History*, vol. xii., p. 1, 1869).

12. "On the Early Stages of Brachiopods" (*American Naturalist*, Salem, vol. iii., 7 figures, pp. 2, 1869).

13. "Position of the Brachiopoda in the Animal Kingdom" (*American Naturalist*, Salem, vol. iii., 3 figures, pp. 2, 1870).

14. "The Brachiopoda a Division of Annelida" (*American Journal of Science and Arts*, vol. i., 3 figures, pp. 4, 1870).

15. "A Reply to Mr. Dall's Criticism on the Brachiopoda a Division of Annelida" (*American Journal of Science and Arts*, vol. i., pp. 4, 1870).

16. "On the Early Stages of an Ascidian" (*Proceedings of the Boston Society of Natural History*, vol. xiv., 1 plate, 6 figures, pp. 7, 1871).

17. "On the Tarsus and Carpus of Birds" (*Annals of the New York Lyceum of Natural History*, 2 plates, 48 figures, pp. 22, 1871).

18. "On the Land-slides in the Vicinity of Portland, Maine" (*Proceedings of the Boston Society of Natural History*, vol. xii., 1 map, 3 figures, pp. 10, 1869).

19. "Remarks on the Relations of Anomia" (*Proceedings of the Boston Society of Natural History*, vol. xiv., 6 figures, pp. 4, 1871).

20. "Remarks on the Adaptive Coloration of Mollusca" (*Proceedings of the Boston Society of Natural History*, vol. xiv., pp. 5, 1871).

21. "On the Early Stages of Terebratulina" (*Memoirs of the Boston Society of Natural History*, 2 steel plates, 58 figures, pp. 11, 1871).

22. "On the Oviducts and Embryology of Terebratulina" (*American Journal of Science and Arts*, vol. iv., 17 figures, pp. 3, 1872).

23. "On the Systematic Position of Brachiopoda" (*Proceedings of the Boston Society of Natural History*, vol. xv., 58 figures, pp. 60, 1873).

24. "Embryology of Terebratulina" (*Memoirs of the Boston Society of Natural History*, vol. ii., 2 plates, 108 figures, pp. 15, 1874).

25. "Apparatus for illustrating the Variations of Wave-Lengths by the Motion of its Origin" (*Proceedings of the American Association for the Advance of Science*, vol. xxii., 3 figures, pp. 3, 1874).

26. "Relationships of the Tunicates" (*Proceedings of the Boston Society of Natural History*, vol. xiv., 1874).

27. "Observations on the Spittle-Insect" (*Proceedings of the Boston Society of Natural History*, vol. xiv., 1874).

28. "First Book of Zoology" (D. Appleton & Co., publishers, 321 figures, pp. 191, 1875. Reprinted in London, and translated into Japanese).

29. "On a Diminutive Form of the Male in Buccinum Undatum" (*Proceedings of the Boston Society of Natural History*, vol. xviii., 4 figures, pp. 3, 1876).

Prof. Morse came back from Japan to give some lectures here the past season, and returned to that country in April with his family, to continue work there a year or two longer.